

Valparaíso University ValpoScholar

Symposium on Undergraduate Research and
Creative Expression (SOURCE)

Office of Sponsored and Undergraduate Research

Spring 4-24-2013

Searching for a New Epoxide Precursor in TMM Cycloaddition Reactions

Christopher Miko

Valparaíso University, chris.miko@valpo.edu

Follow this and additional works at: <https://scholar.valpo.edu/cus>

 Part of the [Chemistry Commons](#)

Recommended Citation

Miko, Christopher, "Searching for a New Epoxide Precursor in TMM Cycloaddition Reactions" (2013). *Symposium on Undergraduate Research and Creative Expression (SOURCE)*. 262.
<https://scholar.valpo.edu/cus/262>

This Poster Presentation is brought to you for free and open access by the Office of Sponsored and Undergraduate Research at ValpoScholar. It has been accepted for inclusion in Symposium on Undergraduate Research and Creative Expression (SOURCE) by an authorized administrator of ValpoScholar. For more information, please contact a ValpoScholar staff member at scholar@valpo.edu.

Searching for a New Epoxide Precursor in TMM Cycloaddition Reactions

Christopher Miko

Departmental Affiliation: Chemistry
College of Arts and Sciences

In order to explore the feasibility of Pd(0)-catalyzed trimethylenemethane (TMM) cycloaddition reactions with epoxides, the precursor trimethyl-(2-oxiranyl-2-propenyl)-silane (1) was synthesized in a three-step process from propargyl alcohol and reacted with dimethyl malonate, with Pd(PPh₃)₄ acting as a catalyst, in both THF and toluene. This reaction was performed to examine whether the π -allyl Palladium complex forms and whether the epoxide ring opens. NMR spectra show support for π -allyl Palladium complex formation, the epoxide ring opening, and the presence of the expected product, although the solvent used may affect which product forms. Efforts to characterize the product(s) are ongoing.

Information about the Author:

Christopher Miko is a senior physics and chemistry major at Valpo. He plans on going to graduate school for physics and will begin serving on active duty in the U.S. Air Force after graduating.

Faculty Sponsor: Dr. Kevin Jantzi

Student Contact: chris.miko@valpo.edu